

## CLAIMS

1. A method in a mobile telecommunication system using lobes for establishing and maintaining a radio channel between a mobile station (MS) and a base station (BS), **characterized** by the steps of:
  - 5       measuring received signal strength (RSS) or signal quality in each lobe in a sector;
  - selecting the lobe with highest received signal strength (RSS) or signal quality;
  - connecting the transceiver equipment of the base station (BS) to the mobile
  - 10   station (MS) using the selected lobe.
2. A method as claimed in claim 1, **characterized** in that the base station (BS) measures the received signal strength (RSS) or signal quality of the lobes in the sector sequentially.
3. A method as claimed in claims 1 or 2, **characterized** in that a DFU in the
- 15   base station (BS) measures the received signal strength (RSS) or signal quality in each lobe in the sector, and stores the values of the received signal strength or signal quality for each lobe in a memory (RSSI-records).
4. A method as claimed in claim 3, **characterized** in that a base site controller (BSC) reads the values in the memory (RSSI-records) and decides which
- 20   lobe has the highest received signal strength or signal quality selecting that lobe direction for communication with the mobile station.
5. A method as claimed in claim 4, **characterized** in that the base site controller (BSC) configures a lobe shaping unit (LSU) to establish a preferable lobe, e.g. narrower lobe, in the direction of the selected lobe towards the mobile
- 25   station for the downlink and/or uplink respectively.
6. A method as claimed in claim 5, **characterized** in that the base site controller (BSC) allocates a traffic channel (TC) between a transmitter/receiver equipment (TRX) in the base station and the lobe shaping unit (LSU), wherein the traffic channel is established between the base station (BS) and the mobile station
- 30   (MS).
7. A method as claimed in any preceding claims **characterized** in that it is used at call set up and/or at handover between sectors.
8. A method as claimed in claim 7, **characterized** in that a SSM (Signal strength measurement)-equipment in the base station connects a SR (signal
- 35   strength receiver)-unit to the selected lobe with highest received signal strength (RSS) or signal quality, wherein the SR-unit performs signal strength measurements or  $\Phi$  tone measurements in this selected lobe for handover purposes.
9. An arrangement in a mobile telecommunication system using lobes for establishing and maintaining a radio channel between a mobile station (MS) and a
- 40   base station (BS), **characterized** in that a Direction Finding Unit (DFU) in the

base station (BS) is arranged to measure the received signal strength (RSS) or signal quality in each lobe, select the lobe with highest received signal strength or signal quality, and connect this lobe to an arbitrary TRX-equipment in the base station (BS).

- 5        10. An arrangement as claimed in claim 9, **characterized** in that the DFU includes a RSSI-record, RSSI-unit and a fast scanning switch.

11. An arrangement as claimed in claim 10, **characterized** in that the DFU reads RSSI and keeps a RSSI-record for each lobe.

12. An arrangement as claimed in claims 10 or 11, **characterized** in that the  
10 BSC reads the RSSI-record of the DFU and connects continuously the best lobe to the receiver (SR).

